AMENDMENT TO THE CLAIMS

1.(<u>currently amended</u>)   A method of managing grammars used in a
speech recognition system, comprising:
     loading a first grammar in a <u>context-free grammar (CFG)</u>
engine;
         implementing an engine-independent SR interface between the
              CFG engine and a speech recognition (SR) engine;
         communicating words in the first grammar to the SR engine
              through the SR interface;
         notifying the SR engine, through the SR interface, of rules
              in the first grammar; and
         representing the rules in the first grammar to the SR engine
              through the SR interface.

2. (original) The method of claim 1 and further comprising:
         receiving rule queries from the SR engine through the SR
              interface; and
        providing rule information to the SR engine, through the SR
              interface, the rule information enabling the SR engine
              to construct an internal representation of the first
              grammar.

3. (original) The method of claim 2 wherein providing the rule
information includes providing a rule identifier, a rule level
indicator indicating a level of a corresponding rule, state
information representing states in the corresponding rule and
transition information representing transitions in the
corresponding rule.

4. (original) The method of claim 1 and further comprising:
     loading a second grammar in the CFG engine; and
       representing the first and second grammars to the SR engine,

through the SR interface, as a single grammar.

5. (original) The method of claim 4 wherein representing the first and second grammars to the SR engine comprises:
    communicating words in the second grammar to the SR engine
        through the SR interface;
    notifying the SR engine, through the interface, of rules in
        the second grammar; and
    representing the rules in the second grammar to the SR
        engine through the interface.

6. (original) The method of claim 5 wherein communicating words in the second grammar to the SR engine comprises:
    communicating only new words in the second grammar, not in
        the first grammar, to the SR engine through the SR
        interface.

7. (original) The method of claim 1 and further comprising:
    implementing an application-independent application
        interface between the CFG engine and an application.

8. (original) The method of claim 7 and further comprising:
    receiving an activation input from the application, through
        the application interface, indicating which of the
        rules are to be active; and
    providing an activation indication from the CFG engine,
        through the interface, to the SR engine to indicate
        which of the rules are active, based on the activation
        input.

9. (original) The method of claim 7 and further comprising:
    receiving from the application, through the application
        interface, a change indication, indicating a change to

the first grammar; and

determining, in the CFG engine, whether content of a rule in the first grammar is to be changed, based on the change indication; and

if so, providing an invalidation indication to the SR engine, through the SR interface, indicating the first grammar is to be invalidated.

10. (original) The method of claim 9 and further comprising:
receiving queries from the SR engine through the SR interface; and
in response to the queries, providing word and rule information to the SR engine through the SR interface, the word and rule information enabling the SR engine to construct an internal representation of the first grammar with the change.

11. (original) The method of claim 9 and further comprising:
if the content of a rule in the first grammar is not to be changed, but a word or rule is to be added, providing an indication to the SR engine through the SR interface to add the word or rule to the SR engine.

12. (original) The method of claim 1 and further comprising:
determining in the CFG engine whether the first grammar refers to any additional grammars; and
if so, loading the additional grammars in the CFG engine.

13. (original) The method of claim 12 and further comprising:
representing the first and additional grammars to the SR engine, through the SR interface, as a single grammar.

14. (original) The method of claim 13 and further comprising:

communicating words in the additional grammars to the SR
engine through the SR interface;

notifying the SR engine, through the SR interface, of rules
in the additional grammars; and

representing the rules in the additional grammars to the SR
engine through the SR interface.

15. (original) The method of claim 1 wherein communicating words
in the first grammar to the SR engine through the SR interface
comprises:

providing a word handle to the SR engine identifying each
word.

16. (original) A method of parsing a speech recognition result
from a speech recognition (SR) engine, comprising:

receiving the result from the SR engine at a context-free
grammar (CFG) engine having an interface component
exposing methods to implement an engine-independent
interface to the SR engine and an application-
independent interface to an application; and

parsing the result at the CFG engine to obtain a parsed
result; and

providing the parsed result to the application from the CFG
engine.

17. (original) The method of claim 16 wherein receiving the
result comprises:

receiving a rule identifier identifying a rule in a CFG that
spawned the result; and

receiving a plurality of transition identifiers identifying
transitions through the rule that spawned the result.

18. (original) The method of claim 17 wherein parsing comprises:

constructing an indication of a parse tree based on the rule
identifier and the plurality of transition identifiers;
and

providing the indication of the parse tree from the CFG
engine to the application through the application-
independent interface.

19. (currently amended) A middleware component configured for
operation between an application and a speech recognition (SR)
engine, comprising:

a context-free grammar (CFG) engine configured to receive a
first grammar from the application and represent the
first grammar to the SR engine; and

an interface component coupled to the CFG engine, exposing
methods to provide an application-independent interface
to the application and an engine-independent interface
to the SR engine.

20. (original) The middleware component of claim 19 wherein the
CFG engine is configured to notify the SR engine, through the
interface component, of words in the first grammar.

21. (original) The middleware component of claim 19 wherein the
CFG engine is configured to receive a plurality of different
grammars and represent the plurality of different grammars to the
SR engine, through the interface component, as a single grammar.

22. (original) The middleware component of claim 19 wherein the
CFG engine is configured to determine whether the first grammar
refers to any additional grammars.

23. (original) The middleware component of claim 22 wherein the
CFG engine is configured to load the additional grammars referred

to by the first grammar and to represent the first grammar and
the additional grammars to the SR engine, through the interface
component, as a single grammar.

24. (original) The middleware component of claim 23 wherein the
CFG engine is configured to represent the first and additional
grammars as a single grammar by providing substantially only
word, rule and transition information indicative of words, rules
and transitions in the first and additional grammars, regardless
of a grammar containing the words, rules and transitions.

25. (original) The middleware component of claim 19 wherein the
CFG engine is configured to receive change information indicative
of changes to the first grammar and to provide an invalidation
output to the SR engine, through the interface, invalidating the
first grammar in the SR engine.

26. (original) The middleware component of claim 25 wherein the
CFG engine is configured to receive a plurality of queries from
the SR engine, through the interface, and to represent the first
grammar, with the changes, to the SR engine in response to the
queries.

27. (currently amended) A computer readable medium including
instructions which, when implemented by a computer, cause the
computer to perform the method of managing grammars used in a
speech recognition system, comprising:

    loading a first grammar in a context-free grammar (CFG)
        engine;

    implementing an engine-independent SR interface between the
        CFG engine and a speech recognition (SR) engine;

    communicating words in the first grammar to the SR engine
        through the SR interface;

notifying the SR engine, through the SR interface, of rules
in the first grammar; and
representing the rules in the first grammar to the SR engine
through the SR interface.

28. (original) A computer readable medium including instructions
which, when implemented by a computer, cause the computer to
perform the method of parsing a speech recognition result from a
speech recognition (SR) engine, comprising:
receiving the result from the SR engine at a context-free
grammar (CFG) engine having an interface component
exposing methods to implement an engine-independent
interface to the SR engine and an application-
independent interface to an application; and
parsing the result at the CFG engine to obtain a parsed
result; and
providing the parsed result to the application from the
CFG engine.

29. (New)   A speech processing component, comprising:
a layer configured to implement an application interface for
communication with an application and a speech
recognition (SR) interface for communication with a SR
engine, the layer including a context-free grammar
(CFG) engine configured to represent a plurality of
grammars to the SR engine, through the SR interface, as
a single grammar.

30. (New) The speech processing system of claim 29 wherein the
CFG engine is further configured to load the plurality of
grammars from one or more applications through the application
interface.

31. (New) A method of managing grammars in a speech processing

system, comprising:

    providing a program component configured to communicate with an application through an application interface and with a speech recognition (SR) engine through an SR interface, the program component including a context-free grammar (CFG) engine; and

    representing to the SR engine, with the CFG engine through the SR interface, a plurality of grammars as a single grammar.

32. (New) The method of claim 31 and further comprising:

    loading the plurality of grammars into the CFG engine through the application interface.